

REMARKS/ARGUMENTS

Claims 26-38 are active. Elected Species II refers to an electronic device having a condensable fluid, see e.g., Fig. 4. Claims 26-38 now all refer to an electronic device having a condensable fluid. These claims find support in the original disclosure as follows: Claims 26-27 (Claims 1, 4, page 7, lines 1-3), Claim 28 (page 5, lines 6-14), Claim 29 (Claim 7, page 6, lines 20-21), Claim 30 (Claim 8), Claim 31 (Claim 9), Claim 32 (Claim 11), Claim 33 (Claim 12), Claims 34-36 (Claim 17), Claim 37 (Claim 24) and Claim 38 (Claim 25). Accordingly, the Applicants do not believe that any new matter has been introduced. Favorable consideration and allowance of the application is now respectfully requested.

Election/Restriction

Claims 4-6, 10, 14, and 22-25 directed to elected Species II have been elected. The elected species is directed to an electronic device having a condensable fluid as shown in Figure 4. The election/restriction requirement has now been made FINAL.

Claim Objections

Claims 22 and 23 were objected to under 37 C.F.R. § 1.75(c) as being improper dependent claims. These objections are now moot.

Rejection-35 U.S.C. § 112, Second Paragraph

Claims 4-6, 17, and 22-25 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for using the term “approximate”. These rejections are moot in view of the cancellation of these claims. While new Claims 26-27 use the term “approximate”, this term is described by reference “wherein said coefficients of thermal expansion are such that they do not generate significant thermal stress between the gradient layer and the die or electronic

part or heat spreader". Accordingly, the Applicants submit this rejection would not apply to the present claims.

Rejection - 35 U.S.C. § 102(b)

Claim 4-6, 22 and 23 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,914,551 to Anschel et al. This rejection is moot and would not apply to the present claims, because Anschel does not disclose a heat spreader which comprises a sealed structure encapsulating a condensable fluid therein which can repeatedly evaporate and condense to transport heat.

Rejection - 35 U.S.C. § 102(b)

Claims 10 and 14 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,582,242 to Hamburgen et al., or alternatively by U.S. Patent No. 5,412,535 to Chao et al. This rejection is moot since Claims 10 and 14 have been cancelled. It would not apply to the present claims, because Hamburgen et al. and Chao et al. do not disclose an electronic part or die wherein the die or electronic part is joined to the heat spreader in a manner that no significant thermal stress is caused between the heat spreader and die or electronic part by heat generated by the die or electronic part. Thus, these two reference teach devices which are attached to each other which are similar to the devices described in the Background section of the present specification, see the specification, page 2, lines 10-23. Such devices are problematic because the differing coefficients of thermal expansion of the electronic part or die and the heat spreader give rise to thermal stress and cause separation of components and thus are unreliable.

For example, Hamburgen (see Fig. 1) uses epoxy (42) to attach die (20) to boiler (26), see col. 5, lines 33-43 and is unconcerned with thermal stress. Chao describes a heat pipe

containing the electronic device (15) mechanically coupled with the thermally conductive material (21) with a layer of grease between the electronic device and thermally conductive material, or connected with epoxy or solder, col. 4, lines 23-31. Chao is also unconcerned with thermal stress. Accordingly, the Applicants respectfully submit that this rejection would not apply to the present claims which that the die or electronic part and heat spreader be joined in a manner that no significant thermal stress is caused between the heat spreader and die or electronic part by heat generated by the die or electronic part.

Rejection - 35 U.S.C. § 103

Claims 17, 24 and 25 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Anschel et al., U.S. Patent No. 4,914,551. This rejection is moot in view of the cancellation of these claims and would not apply to the present claims for the reasons discussed above.

CONCLUSION

In view of the above amendments and remarks the Applicants respectfully submit that this application is now in condition for allowance. Early notification to that effect is respectfully requested.


Respectfully submitted,

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